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Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/316,899 05/22/99 KIROVSKI

D MS1-356US

022801 WM31/1002  
LEE & HAYES PLLC  
421 W RIVERSIDE AVENUE SUITE 500  
SPOKANE WA 99201

EXAMINER
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MEISLAHN, D. ART UNIT	PAPER NUMBER
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2132  
DATE MAILED:

*9*  
10/02/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

*WT*

<b>Office Action Summary</b>	<b>Application No.</b> 09/316,899	<b>Applicant(s)</b> KIROVSKI ET AL.	
	<b>Examiner</b> Douglas J. Meislahn	<b>Art Unit</b> 2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 22 May 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |                                                                                                                |                                                                             |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                    | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                           | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4-8</u> . | 6) <input type="checkbox"/> Other:                                          |

## DETAILED ACTION

### *Drawings*

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Although the figure shows an apparatus that could be used in applicant's invention, the figure does not contain elements that applicant considers exclusive to the instant invention.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1, 4, 22, 26, 33, and 34 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Mintzer et al. ("If One Watermark is Good, Are More Better?").

Applicant specifically stipulates that the claims relate to audio systems. In their abstract, Mintzer et al. mention that watermarks can be put into digital media, which anticipates audio data.

4. Claims 12-14 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Linnartz (5933798).

Linnartz's second figure shows an evaluation circuit, which reads on the second clause of claim 12. The input reads on applicant's synchronization circuit, as in all of

the data might contain a watermark. Table I in column 4 shows two values, one of which indicates a match and the other of which indicates the reverse. Although Linnartz's preferred embodiment is disclosed as being an image watermarking system, it is apparent from the introduction that the teachings are applicable to audio systems.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mintzer et al. in view of Levine et al. (6209094).

Mintzer et al. show data that is watermarked with both robust, or strong, and fragile, or weak, watermarks. They do not say that the placement of any of these watermarks is determined by an audible measure of the data. In lines 45-51 of column 5, Levine et al. say that robust watermarks should be encoded into audible sections of a signal. If recorded into inaudible sections, the data with the robust watermarks could be removed without significantly perceptibly changing the signal. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the robust watermarks of Mintzer et al. within audible regions of the data so as to prevent the watermarks from being stripped without degrading the audio signal.

7. Claims 3, 27-29, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mintzer et al. in view of Levine et al. and Adler et al. (6275599).

Mintzer et al. show data that is watermarked with both robust, or strong, and fragile, or weak, watermarks. They do not say that strong watermarks are put into audible sections and weak watermarks into inaudible sections. Levine et al. show the insertion of strong watermarks into audible sections of data. The rationale behind the combination of these two references is presented in the preceding paragraphs. A unit that determines the audibility or inaudibility of the data is mandatory and hence inherent.

Adler et al. teach the insertion of fragile watermarks into data. In the paragraph bridging columns 2 and 3, they indicate that the watermark should produce mostly invisible artifacts. As this teaching applies to Mintzer et al., the fragile watermarks should produce mostly inaudible artifacts. (Artifacts are notable alterations in the document that watermark insertion produces.) Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to insert the fragile watermarks in the least audible part of Mintzer et al.'s data, thereby producing artifacts that would be inaudible.

8. Claims 5, 10, 11, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mintzer et al. and Levine et al. as applied to claim 2 above.

Mintzer et al. show data that is watermarked with both robust and fragile watermarks. Levine et al. say that the robust watermarks should be placed in audible sections of the data. Levine et al. specifically single out inaudible frequencies as ineligible for robust watermark reception. Their disclosures render the final three clauses of claim 5 obvious. Neither reference talks about determining the absolute magnitude of a sound and using that to determine if the data is audible. Official notice

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is taken that it is old and well known that sounds that are within human's audible frequency range are not necessarily audible. By way of example, consider a dog whistle, which is inaudible to humans no matter how loudly it is sounded, versus an unheard whisper, which would have been audible had it been spoken more loudly. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to avoid placing robust watermarks within any inaudible sections of Mintzer et al.'s data, be they inaudible because of their frequency or magnitude, because of the teachings of Levine et al.

9. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mintzer et al. and Levine et al. as applied to claim 5 above, and further in view of Adler et al.

Mintzer et al. and Levine et al. have been combined to show data that is watermarked with both robust and fragile watermarks. The robust watermarks are in audible sections of the data, where the audible measure is the magnitude of the audio in the signal. They do not say that the fragile watermarks are put in inaudible sections. Adler et al. teach the insertion of fragile watermarks into data. In the paragraph bridging columns 2 and 3, they indicate that the watermark should produce mostly invisible artifacts. As this teaching applies to Mintzer et al., the fragile watermarks should produce mostly inaudible artifacts. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to insert the fragile watermarks in the least audible part of Mintzer et al.'s data, thereby producing artifacts that would be inaudible.

In regard to claims 7 and 8, the predetermined amount is not necessarily zero, and hence the cited art reads on the claims.

10. Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Mintzer et al. and Levine et al. as applied to claim 5 above.

Mintzer et al. and Levine et al. have been combined to show data that is watermarked with both robust and fragile watermarks. They do not say that the encoding system includes a compression unit that uses the magnitude components. Official notice is taken that compression units that operate on magnitude components are old and well known. These units have a bevy of uses, one of which is compressing the levels of a signal so that the magnitudes fit within a desired range. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a compressor with the watermarking apparatus so that the data could be compressed.

11. Claims 17, 18, 21, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnartz in view of Mintzer et al. and Levine et al.

Linnartz shows a method for detecting watermarks. Element 21 anticipates a pattern generator. Element 24 of figure 3 anticipates a detector. Linnartz does not say that the pattern generator generates both a strong and a weak watermark. Mintzer et al. teach the benefits of incorporating multiple watermarks into data. The different watermarks, robust, fragile, or otherwise, all convey different types of important information. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made for Linnartz's pattern generator to generate both

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robust and fragile watermarks in order to check for different types of useful information as taught by Mintzer et al. The first two elements of applicant's claim perform no purpose within the claims, so their treatment is curtailed. They are obvious over Levine et al. in ways outlined in previous sections. With respect to claim 18, Linnartz has already been cited as showing correlation values.

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Linnartz, Mintzer et al., and Levine et al. as applied to claim 17 above.

Linnartz, Mintzer et al., and Levine et al. teach a watermark detection system. They do not say that a decompressor is included with the system. Official notice is taken that decompression units that operate on magnitude components are old and well known. These units have a bevy of uses, one of which is decompressing the levels of a signal so that the magnitudes attain their original status. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a decompressor with the watermarking apparatus so that the data could be decompressed.

13. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mintzer et al. in view of Linnartz.

Mintzer et al. show a watermarking system using multiple watermarks. In the last full paragraph of the first column, Mintzer et al. mention that an owner of digital content might wish to place a watermark within the content. They do not explicitly say that detection means would reside with a recipient. In lines 18-24 of column 1, Linnartz intimates that detection apparatus can be separate from the source of data. This aids in



tracing piracy. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include detecting systems at clients who use the content.

14. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mintzer et al., Levine et al., and Adler et al. as applied to claim 29 above, and further in view of Linnartz.

Mintzer et al., Levine et al., and Adler et al. show watermarking audible data with robust watermarks and inaudible data with fragile watermarks. They do not say that watermarks are detected using correlation values. Linnartz discusses measuring correlation values as a method of determining if a watermark is present, as has previously been mentioned. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made for watermarks would be detected according to correlation values as taught by Linnartz. This would allow the valuable watermarks taught by Mintzer et al., Levine et al., and Adler et al. to be detected.

15. Claims 15, 19, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mintzer et al., Levine et al., Adler et al., and Linnartz as applied to claims 12, 17, and 27 above.

Mintzer et al., Levine et al., Adler et al., and Linnartz show detecting watermarks through the generation and comparison of correlation values. They do not say that the correlation value must be exceeded by a random amount. Official notice is taken that it is old and well to add a random amount to the correlation value in order to combat

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piracy. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to add a random number to the correlation value in order to combat piracy.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Moskowitz et al. (5822432, 5889868, and 5905800), Takai et al. (6024287), Bhaskaran et al. (6064764), Levine (6219634), Coppersmith et al. (6256736), and Bloom et al. (6282300).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas J. Meislahn whose telephone number is (703) 305-1338. The examiner can normally be reached between 9 AM and 6 PM, from Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gail Hayes can be reached on (703) 305-9711. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-0040 for regular communications and (703) 308-0040 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Douglas J. Meislahn  
Examiner  
Art Unit 2132

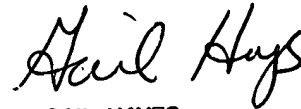
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DJM

September 23, 2001

A handwritten signature in cursive script, reading "Gail Hayes".

**GAIL HAYES**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2100**